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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/575,860 | 01/25/2007 | Kyu Young Kim | K-0800 | 6863 |
| 34610 7590 04/02/2008 KED & ASSOCIATES, LLP P.O. Box 221200 Chantilly, VA 20153-1200 | | | | |
| EXAMINER | | | | |
| LEUNG, PHILIP H | | | | |
| ART UNIT | | PAPER NUMBER | | |
| 3742 | | | | |
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| 04/02/2008 | | PAPER | | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/575,860

Applicant(s)

KIM, KYU YOUNG

Examiner

PHILIP H. LEUNG

Art Unit

3742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 December 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-8508)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

1. The drawings filed 12-11-2007 are acceptable. However, the drawings are further objected to under 37 CFR 1.83(a) for the following reason: The drawings must show every feature of the invention specified in the claims. Therefore, the claimed temperature gages claimed in claim 26 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

2. In claim 1, the term "convention" at lines 8, 9 and 10 should read "convection" instead. Further, the term "the cooling chamber" at lines 7 and 10 of claim 1 and at line 4 of claim 26 should read "the cooking chamber" instead. Furthermore, in claims 7 and 8, the term "the cooling fan" has no clear antecedent basis in claim 6. Clarification and correction are required.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Koinuma (US 4,091,252) (newly cited).

Koinuma shows a microwave ovens comprising: a body 1 forming an outer appearance; an inner case (formed by partition 20) in the body having a cooking chamber 3 formed therein; an outfit room (the room on top of chamber 3) at one side (partition 20) of the inner case, the outfit room having a plurality of electric parts mounted therein (including a magnetron 2 and its components); and a convection assembly 18 mounted at a side of the inner case transmits heat to the cooking chamber, wherein the convection assembly comprises: a convection heater (anode 12) configured to generate heat for convection heating; and a convection fan 18 configured to transmit the heat generated by the heater to the cooking chamber, and wherein the convection heater is positioned adjacent the convection fan (see Figure 1 and col. 2, line 36 – col. 3, line 58).

5. Claims 1, 2 and 21-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Aoyama (JP 3-168526) (newly cited).

Aoyama shows a microwave ovens comprising: a body 1 forming an outer appearance; an inner case 4 in the body having a cooking chamber 2 formed therein; an outfit room 3 at one side (partition 20) of the inner case, the outfit room having a plurality of electric parts mounted

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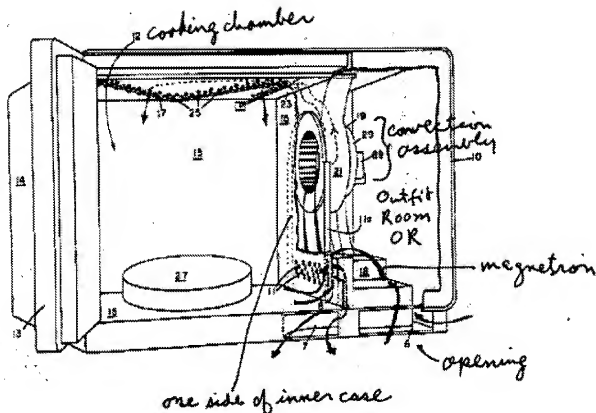
therein (including a magnetron 7 and transformer); and a convection assembly 9 mounted at a side of the inner case transmits heat to the cooking chamber, wherein the convection assembly comprises: a convection heater 8 configured to generate heat for convection heating; and a convection fan 18 configured to transmit the heat generated by the heater to the cooking chamber, and wherein the convection heater is positioned adjacent the convection fan (see Figures 1-11 and the English abstract).

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 2, 6, 21-24 and 26 are rejected under 35 U.S.C. 103(a) as being obvious over Larsen et al (US 4,332,992) (previously cited), in view of Tanaka et al (US 4,337,384) (newly cited).

Larsen shows a microwave oven comprising: a body 10 forming an outer appearance; an inner case 15 in the body having a cooking chamber 12 formed therein; an outfit room (marked as OR) at one side of the inner case, having various electric parts, (including a magnetron 18, a high voltage transformer 92), mounted therein; and a convection assembly (19, 21, 29) mounted at a side of the inner case, for transmitting heat to the cooking chamber and a convection heater 17 for generating heat for convection heating (see the marked-up copy of Figure 1 below).



As set forth above, Larsen shows every feature as claimed except for the location of the convection heater 17. Tanaka shows a microwave oven having a convection assembly chamber 20 located adjacent to the inner casing with a cooking chamber 2. A convection assembly including a convection fan 17 surrounded by a ring shaped heater 15 as a convection heating element for convection heating of food items 31 in the microwave cooking chamber (see Figures 1-3 and 6-9 and col. 3, line 32 – col. 4, line 15). It would have been obvious to an ordinary skill in the art at the time of invention to modify Larsen to locate a convection heater surrounding the convection fan so that the heated air can be directed forced into the cooking chamber for more efficient and better cooking result, in view of the teaching of Tanaka. In regard to claim 26, the use of temperature sensors in a microwave convection combination is well known. For instance, Larsen teaches the use of a temperature sensing system 30 (see col. 4, lines 1-9) and Tanaka uses

a temperature sensor 52 in the convection assembly room 20 adjacent the convection heater 15 and the convection fan 17 for monitoring the temperature of the heated air to control the heating (see Figure 7 and col. 5, lines 41-46).

8. Claims 3, 4, 7-20 and 25 are rejected under 35 U.S.C. 103(a) as being obvious over Larsen et al (US 4,332,992), in view of Tanaka et al (US 4,337,384) as applied to claims 1, 2, 6, 21-24 and 26 above, and further in view of Takeshita (JP 5-144561).

As set forth above, Larsen shows every feature as claimed except for the location of the cooling fan. Takeshita shows a microwave oven having an outfit room including a magnetron 15, a transformer 16 and a cooling fan 3 located on an upper surface at a rear corner of the outfit room (as claimed in claims 3, 4). It also shows holes 21 in the bottom of the of the oven body and an exhaust opening 22 in an upper surface of the body (as claimed in claims 9, 12 and 16) (see Figures 1 and 2 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Larsen combined with Tanaka to locate a cooling fan at the upper rear corner of the outfit room (OR) to more efficiently cool the electric components in the outfit room in order to form a compact size oven and reduce noise, in view of the teaching of Takeshita. The exact location of the fan and the air inlet and outlet holes would have been a matter of engineering expediency depending on the overall relative location of all the oven components, such as the electric heaters, the convection assembly, the microwave generating components and the power supply system.

9. Claim 5 is rejected under 35 U.S.C. 103(a) as being obvious over Larsen et al (US 4,332,992), in view of Tanaka et al (US 4,337,384) and Takeshita (JP 5-144561), as applied to claims 3, 4, 7-20 and 25 above and further in view of Idomoto (JP 2-244586) (previously cited).

As set forth above, Larsen combined with Tanaka and Takeshita shows every feature as claimed except for the use of a tilted cooling fan. Idomoto shows a microwave oven having an outfit room including a magnetron 4, a transformer 9, electric motor 5 and a cooling fan 2 which is tilted toward these heat generating components (see Figure 3 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Larsen combined with Tanaka and Takeshita to tilt the cooling fan toward the heat generating components for more efficient and better cooling result, in view of the teaching of Idomoto.

10. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H. Leung whose telephone number is (571) 272-4782.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on (571)-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Philip H Leung/

Primary Examiner, Art Unit 3742

P.Leung/pl
3-29-2008